

Umatilla NF Aquatic Restoration EA

Range Report

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Introduction

Range analysis focuses on potential changes in vegetation composition and/or vegetation densities by livestock herbivory as a result of implementation of Proposed Action in and adjacent to stream channels. This report will also analyze potential short or long term impacts to upland vegetative resource by livestock herbivory if Proposed Action is implemented, or not.

This report will address alternative compliance with relevant laws, regulations, policies, and plans.

Resource Indicators and Measures

Issue: Implementing the proposed actions would result in changes of forage availability to livestock, require changes in pasture rotation or rest, alter livestock water sources, and increase maintenance costs. Measure: available forage per acre, timing and duration of livestock in pastures, distance to available water, and management time and cost.

Table 1: Resource indicators for grazing management concern or LRMP standard and measures for assessing effects

Proposed action	Grazing Management Resource Indicator	Measure/Mitigation
Prescribed fire in Riparian	Forage availability Pasture rest/ rotation	Available tons/acre Timing of pasture use
Fencing of Stream channels	Water availability Forage availability Pasture rotation Fence maintenance Changed use pattern	Livestock distance to water Available tons/acre Frequency of rotation/moves Cost, management time Frequency of moves/Change in rotation
Off-channel water development	Water availability Changed use pattern	Number & location of developments Management time
Riparian planting	Pasture rest/ rotation Fence maintenance Forage availability	Timing of pasture use Cost, management time Available tons/acre
Stream crossings	Water availability	Livestock distance to water
Juniper density thinning	Forage availability Changed use pattern	Available tons/acre Management time
All other projects	Time of proposed activity and allotment management overlap	Days

Methodology

The basis of the effects analysis is the observations, experience, and professional judgment of the Rangeland Management Specialist, in conjunction with best available science.

Affected Environment

Existing Condition

Native grass and forb species are predominant in the dry forest type, however some areas have been mixed with non-native species (intermediate wheatgrass and Kentucky bluegrass), introduced to stabilize

soils along roads, skid trails, and logging landing sites. Some of these same disturbed locations now host populations of invasive plants. Riparian zones consist of meadows with obligate wetland species including native grasses, sedges and rushes, riparian hardwoods and structurally diverse shrublands.

The Umatilla National Forest administers 35 grazing permits on 33 active allotments. Active permits are reviewed annually prior to the use season. All permits contain structural improvements that are maintained by grazing permittees and the forest service. Structural improvements include allotment boundary and pasture fences, small enclosure fences, and watering troughs and ponds. Fences are maintained annually, troughs and ponds are maintained on an as needed basis but typically at least every 5 years. Management activities include herding and trailing of livestock and placing salt blocks throughout the allotments. Management activities occur throughout the grazing season using pick-ups, ATVs, horseback and on foot. Cattle, horses, and sheep are moved on and off of the forest for the grazing season via truck or trailing.

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Table 2: Resource indicators for grazing management concern or LRMP standard and measures for existing condition (Alternative 1 No Action)

Proposed action	Grazing Management Resource Indicator	Existing Condition (Measure)
Prescribed fire in Riparian	Forage availability	600 lbs/acre
	Pasture rest/ rotation	Variable across forest
Fencing of Stream channels	Water availability	Currently utilizing water from stream
	Forage availability	Generally available, not fenced
	Pasture rotation	Rotation based on forage utilization
	Fence maintenance	Herding, salting used as distribution tools, few riparian fences currently
Off-channel water development	Water availability	Limited undeveloped spring sources in most areas forest wide
	Changed use pattern	Distances to upland water limit grazing in suitable areas
Riparian planting	Pasture rest/ rotation	Usually fenced, limited
	Fence maintenance	Few riparian fences
	Forage availability	Generally available
Stream crossings	Water availability	Currently utilizing water from stream, few fences to limit access
Juniper density thinning	Forage availability	Forage production in lbs/acre limited due to high juniper densities.
	Changed use pattern	Search for forage elsewhere
All other projects	Time of proposed activity and allotment management overlap	Adjust as needed

Forage availability is variable across the forest and from year to year based on climatic conditions. The forest currently uses prescribed burning, and juniper thinning to reduce fuel loads and encroachment that also result in overall increase in forage availability for livestock. The forest currently has adequate forage availability to support ongoing livestock operations of about 46,000 animal unit months or 169,000 tons of dry matter forage (Countryman, 2011).

Tremendous variation often exists among riparian areas of a stream network, and fire behavior and effects will depend on local conditions and position in the watershed (Dwire, K and Kauffman, J.B) Studies have specifically shown hardwood tree and shrub-dominated riparian zones to have declined since the mid-1800s (Lee 1997, Wisdom 2000) throughout the Columbia Basin. Current palatable vegetation in riparian zones consists of hydric and upland grasses as well as palatable shrubs such as willow and alder. It is anticipated that prescribed burning in riparian zones will significantly alter herbaceous and browse species in the long run.

Encroachment and expansion of trees in uplands has reduced herbaceous vegetation in part due to reduction in water infiltration and increased runoff as well as reduction of sunlight dependent grasses, forbs and shrubs. Local studies that compared cut and uncut treatments reported significant increases in herbaceous cover and biomass when juniper trees were removed (Bates 2000).

Generally, cattle will travel about 1 mile to seek water, whereas sheep will travel about 2.5 miles to seek water.

In most cases, livestock have access to aquatic (riparian) vegetation until allowable forage utilization levels are met. Riparian forage utilization standards and the range goals found in the LRMP (1990) are the principal management tools used in achieving desired vegetation conditions. Some aquatic (riparian) reaches are excluded completely from livestock grazing by fencing or natural barriers. Occasionally, utilization standards or other impacts are exceeded beyond acceptable levels.

After fencing, water is one of the most frequently used tools for affecting cattle distribution (Ganskopp 2001). Livestock are very habitual and will often preferentially utilize water sources that they have experience with and that they know are safe; often travelling long distances, even passing unknown water sources to use their preferred sites (Holecheck et al. 1995).

Cost of troughs, pipelines and fence maintenance, repair and replacement are incurred annually by grazing permittees. Costs of herding and salting are also incurred annually by grazing permittees.

Management Direction

Desired Conditions from the 1990 LRMP

Riparian vegetation will be dense and diverse, contributing shade for water temperature control, stable streambanks and controlled sediment, and complex fish habitat along the banks. Large diameter standing dead and live trees will provide a long-term supply of large woody material for instream fish habitat and channel stability. A variety of other habitats including dead and down tree habitat and satisfactory cover for big game will be found within the riparian area. Forest wildlife species will continue to use riparian habitat areas disproportionately more than any other habitat type. Evidence of streambank trampling from livestock will be less common. Dispersed recreation activities of all types will be abundant and available for a variety of users. Quality riparian management will assist in meeting anadromous and resident fish productivity goals.

Intensive range management, including superior grazing systems, will be practiced to protect and improve riparian vegetation and anadromous fish and wildlife habitats. Range management techniques that control livestock distribution and timing of use will be used to meet riparian goals. Periods of extended rest may

be utilized in some situations where necessary to allow re-establishment of desired shrub communities. Grazing systems utilizing riparian pastures may be required to maintain water quality and protect riparian vegetation. Improvements should be located to encourage livestock use away from the riparian areas. Riparian corridor fencing should be considered on a very limited basis for special applications.

Within 8 years of revision of allotment management plans (AMP's), recovery of hardwood and shrub vegetation will be at least 75 percent of the expected achievement based on riparian classification and inventory.

Range management techniques that control livestock distribution and timing of use will be used to meet riparian habitat goals. Range improvements that maintain or enhance riparian habitat goals will be permitted. Improvements should be located to encourage livestock use away from the riparian areas. Grazing systems utilizing riparian pastures may be required to maintain water quality and protect riparian vegetation. Riparian corridor fencing should be considered on a limited basis for special applications.

Environmental Consequences

Alternative 1 – No Action

Desired riparian habitat conditions would not be achieved as quickly as would under the Proposed Action. Grazing Management Resource Indicators (Table 2) would remain the same as existing condition.

Alternative 2 – Proposed Action

The Aquatic Restoration activities proposed would provide a consistent methodology to design, implement, monitor, and document restoration activities such as re-configuring livestock fencing and off-stream water developments to influence more favorable grazing utilization patterns. Thinning and prescribed fire in uplands should enhance and increase favorable herbaceous vegetation. Although less is known and more variability occurs in riparian area burning, it is likely to positively influence herbaceous and woody browse species (Dwire, K and Kauffman, J.B).

Project Design Criteria and Mitigation Measures

Grazing Schedule

Rangeland Management and Fuels Specialists would coordinate activities with permittees, including scheduling of burning activities in allotment pastures.

Utilize the Forest Post-Fire Interim Grazing Guidelines (Williams 2003)¹ to aid in determining when to resume grazing activities.

Whenever possible, units to be rested would be burned in the spring of the year to be rested or in the fall prior to the rest year.

If a rest period is required following a burn the permittee has the option to exclude cattle grazing from those portions of a pasture that were burned through the use of fencing and could continue to graze the unburned areas of a unit.

Protection of Government and Permittee Investments

¹ <https://ems-team.usda.gov/sites/fs-r06-unfnepa/Aquatic%20Restoration%20Project/NEPA/Williams.%202003-%20MALHEUR%20POST-FIRE%20GRAZING%20INTERIM%20GUIDELINES.pdf>

All existing structural range improvements (fences, gates, spring developments, etc) and permanent ecological plots would be contractually protected (ATPs).

Protection of the structural range improvements must be maintained.

If structural improvements are damaged during project operations they would be repaired to Forest Service standards prior to livestock scheduled use by the party responsible for causing the damage. Repairs would be required of the purchaser if damage was done during thinning or fuel treatment contractors or by force account where appropriate.

Fence right of ways (6ft either side of fence), trails, other developments and access to them would be cleared of slash produced by project activities.

Aspen Restoration

New aspen enclosure fences should have gates installed in proper locations to allow for removal of stray livestock. Aspen fences should be maintained prior to the start of the grazing season each year and repaired whenever necessary. Plans for aspen enclosures will define when restoration of the protected stand has been achieved and who is responsible for maintenance. When fences are no longer needed, aspen fences should be removed.

Alternate water sources to ones in aspen stands would be developed off-site before fencing aspen, or re-evaluate fencing of the aspen site – coordinate with Rangeland Management Specialist and permittee.

Notification

During planning stage of each individual project all potentially impacted grazing permittees will have notice of action and opportunity to provide input that may lessen impacts to their livestock operation.

Prior to implementation all potentially impacted grazing permittees will be given notice of dates when work will start.

The Rangeland Management specialist will be represented during planning and implementation of every project.

Direct and Indirect Effects

Table 3: Resource indicators and measures for Alternative 2 Proposed Action

Proposed action	Grazing Management Resource Indicator	Proposed Action (Measure)
Prescribed fire in Riparian	Forage availability	Post fire would reduce forage availability in short term (generally 1 year) but increase available forage in longer term. Post fire likely will cause temporary exclusion of livestock in riparian area thus increasing utilization in upland pasture(s).
	Pasture rotation/rest	Pre fire may require exclusion of livestock to provide more fine fuels to increase rate of spread.
Fencing of Stream channels	Water availability	Site specific water availability would generally be lost if excluding livestock from riparian area. Site specific forage availability would
	Forage availability/limit	
	Changed use pattern	
	Fence maintenance	

		generally be lost if excluding livestock from riparian area. Total exclusion of livestock could require a changed rotational schedule. Additional fences would require additional funds and maintenance.
Off-channel water development	Water availability	Upland water development generally has positive effects to forage by decreasing areas of overutilization and increasing areas of underutilization.
	Changed use pattern	Use pattern change will have effect of more even forage utilization throughout allotment.
Riparian planting	Pasture rest/ rotation Fence maintenance Forage availability	Total exclusion of livestock could require a changed rotational schedule. Additional fences would require additional funds and maintenance. Fencing of plantations could limit access to riparian forage and water.
Stream crossings	Water availability	Fencing could limit access to riparian forage and water, increasing use at site.
Juniper density thinning	Forage availability	Juniper thinning is likely to have effect of substantially increasing forage availability as perennial grasses displace areas where juniper was dominate vegetation type.
	Changed use pattern	Areas of juniper encroachment will be opened up, allowing for increased trailing.
All other projects	Time of proposed activity and allotment management overlap	Adjust as needed.

Cumulative Effects

Spatial and Temporal Context for Effects Analysis

The cumulative effects analysis area for this report is considered to be the entire grazing allotment in which activities occur. Since a restoration activity, such as fence installation, has the potential to affect livestock distribution patterns across the entire grazing allotment. These effects are considered for the short term, which would be the next 1-5 years, and the long term, which for the purposes of this report will be the next 25 years. These timeframes are chosen because of changes in management strategies, the need to reevaluate the project periodically, and because of the uncertain effects of varying climatic patterns.

Past, Present, and Reasonably Foreseeable Activities Relevant to Cumulative Effects Analysis

In addition to the proposed action the Forest has other activities that effect grazing management and available forage and water.

Projects currently in the planning stages that would affect water sources used by livestock grazing include forest wide vegetation/fuels reduction or restoration activities that include tree thinning and removal. These activities generally have positive effects to herbaceous vegetation as the canopy opens and grasses increase in growth until the canopy closes again, and the forest floor becomes shaded and grass decreases. No anticipated cumulative effect.

Other activities that could affect forage for livestock include prescribed, naturally occurring, and human caused fires. These projects would reduce forage availability in the short term, 1-3 years and overall increase in forage. With tree canopy, an overall increase in forage will occur as the canopy opens and grasses increase in growth, until the canopy closes again and the forest floor becomes shaded and grasses decrease. This generally takes 20-30 years. These other activities combined with similar types of projects in the proposed action will likely result in an increase of grasses and forbs.

Ongoing management and use patterns include salting, fence maintenance, herding, and general allotment management (time spent keeping livestock distributed properly). Although an increase in fences increases fence maintenance costs, it conversely is likely to reduce labor significantly since much of time spent herding is to remove livestock from riparian areas that are not fenced. More fences means more gates, hence, gates can be left open by hunters and other recreationists. This situation can increase the time permittees and grazing managers spend monitoring livestock movement to ensure standards and plans are being met.

Regulatory Framework

Land and Resource Management Plan

The Umatilla National Forest Land and Resource Management Plan 1990 as amended (LRMP) provides standards and guidelines for rangeland management .

Table 4: Resource indicators and measures for the existing condition

Resource Element	Resource Indicator (Quantify if possible)	Measure (Quantify if possible)	Existing Condition (Alternative 1)
Utilization of riparian vegetation by livestock	Prescribed fire in riparian	Percent forage utilization Residual stubble height (in)	Generally 35-45% 4-6 in.
Utilization of riparian vegetation by livestock	Fencing of Stream channels	Percent forage utilization Residual stubble height (in)	Generally 35-45% 4-6 in. outside enclosure
Utilization of upland vegetation by livestock	Off-channel water development	Percent forage utilization	Generally 35-45%
Utilization of riparian vegetation by livestock	Riparian planting	Percent forage utilization	N/A
Utilization of riparian vegetation by livestock	Stream crossings	Percent forage utilization Residual stubble height (in)	Generally 35-45% 4-6 in.
Utilization of upland vegetation by livestock	Juniper density	Percent forage utilization/pounds per acre production	Generally 35-45%

Source: ocular and utilization measurements conducted by range personnel

Federal Law

Where consistent with other multiple use goals and objectives, there is Congressional intent to allow grazing on suitable lands through:

Multiple Use Sustained Yield Act of 1960

Wilderness Act of 1964

Forest and Rangeland Renewable Resources Planning Act of 1974

Federal Land Policy and Management Act of 1976

National Forest Management Act of 1976.

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